

Research Center will be established at Lawrence Berkeley Laboratory, but Brookhaven's ill-fated ISABELLE will remain on ice.

The Administration is equally cool about solar energy, conservation and fossil energy research. It hopes once again to cut these programmes, this time by \$405 million — over half of the current \$707 million budget. If past years are a reliable guide, Congress is likely to restore the cuts.

Magnetic fusion is to be supported at \$467 million, unchanged from 1983. The Clinch River Breeder Reactor is to receive an increase of \$62 million, up from the 1983 level of \$541. This project's popularity in Congress, however, continues to fade.

Defence

Increases in the research budget are overwhelmingly in the defence sector. Most of the \$29,900 million will go for hardware development of big items such as the MX missile. The basic research part of the defence budget would increase by 12.7 per cent to \$867 million, while the budget for the Defense Advanced Research Projects Agency, which funds cutting-edge research and technology, would rise 19 per cent to \$868 million. Areas of emphasis include very high speed integrated circuits, protection against chemical agents, man-machine interface, information processing, and fault-resistant electronics.

Education

NSF is to receive \$20 million for a programme, begun this year on a \$15 million budget, of workshops and training for secondary school science and mathematics teachers. Approximately 10,000 teachers would participate each year. A second programme, administered by the Department of Education through block grants to local school districts, would train 30,000 new science and mathematics teachers over a four-year period. Both programmes would require matching grants, presumably from industry.

NSF is also to receive an increase in its graduate fellowship funding; each fellowship will carry a stipend of \$8,100 a year, up from the current \$6,900. The number of fellowships, now 1,390, would remain the same.

Miscellaneous

The small competitive grants programme in the Department of Agriculture, at present only \$16 million, would be increased by 50 per cent. Grants would be offered for the first time for research in the animal sciences. The increase is also to take into account the new agricultural research opportunities in genetic engineering.

The National Bureau of Standards faces a \$16 million cut in research and development funding. Support for the Environmental Protection Agency's research programme would be cut 14 per cent from 1983 levels, to \$208 million.

Deborah Shapley & Stephen Budiansky

India in Antarctica

International treaty still on ice

Washington

INDIA'S Antarctic ambitions, hitherto not clearly explained, owe something to its wish to be the leader of developing countries seeking a voice in Antarctic affairs. This was the impression left last week by the visit of Dr S. Z. Quazim, secretary of India's Department of Ocean Developments.

Whether developing countries will have a say in the future of the Antarctic region, and of the 1961 Antarctic Treaty that governs it, is not, however, clear. In recent years, some developing nations have started to work under the framework of the treaty, which is subscribed to mainly by industrial nations rich enough to send ships, build bases and carry out scientific programmes in the Antarctic. Other developing nations have denounced the treaty arrangement, saying the United Nations should control Antarctica. India has not yet taken sides on this question although several treaty nations, including the Soviet Union, are urging India to join. Quazim said the Indian government is studying the advantages of acceding to the treaty, which freezes the dispute over territorial claims and bans new claims and military activities.

India is the only nation to have sent major expeditions to Antarctica without first acceding to the treaty. Quazim led the first Indian expedition in 1981–82. A second expedition is there now, preparing for a permanent base on the Princess Astrid Coast, in a part of the continent claimed by Norway. The site is said to be at 70° 46' S and 11° 50' E, about 50 miles from the Soviet station Novolazarevskaya. India also has an unmanned weather station at approximately 43° E on the coast there.

Technically, the treaty nations already in Antarctica can refuse to help the Indian expedition, because it is operating outside the framework of the treaty. Technically also, India is free to assert a territorial claim only so long as it stays outside the treaty. But nobody seems to be considering either of these extreme actions.

Francis Johnson, the assistant director of the National Science Foundation, which runs the US Antarctic Program and who had a meeting with Quazim, says "if something realistic emerged on which we could cooperate, then the policy question would have to be faced. But we do not intend to enter into cooperative activities with any nation that has not acceded to the Antarctic Treaty."

One sure sign of India's continuing plans for the Antarctic is that Indian officials in Washington are negotiating to buy as many as five ski-equipped Lockheed C-130s. Lockheed is said to have sought permission from the State Department to export the planes. The United States operates six C-130s in Antarctica each season, and at current prices a single aircraft, with spare parts, costs around \$26 million.

The ultimate question is whether India will accede to the treaty rather than press for United Nations control. At the time of the 1981–82 expedition, Quazim said, India sent letters to other non-aligned nations describing its interests in the Antarctic. Few raised objections.

On the other hand some Indian scientists have attended a recent meeting of the Scientific Committee on Antarctic Research (SCAR) held in Leningrad, Quazim said. Both Brazilian and Chinese scientists have participated in several SCAR meetings, and have visited US bases in the Antarctic. Both of these influential developing countries have indicated their intention of working through the treaty framework. Active participation in SCAR is considered a prerequisite for becoming a full party to the Antarctic Treaty.

US officials are wary of getting involved in India's plans in the Antarctic so long as India stays outside the treaty. But having a major non-aligned nation inside the treaty circle might be workable, one official said. "It would be like having a socialist who always runs for President. The socialist never wins, but he has some influence." Clearly, some Indians are thinking the same thing.

Deborah Shapley



The ubiquitous Lockheed C-130 on skis — India would like five